

Amendment dated August 18, 2004
Appl. No. 10/616,342
Atty. Docket No. 00100.66.0068

REMARKS

This is in response to a non-final Office Action dated May 18, 2004. Applicants respectfully traverse and request reconsideration. Claims 27-45 are pending in the application. The undersigned wishes to thank the Examiner for the Examiner interview on August 6, 2004 and for an indication that the amendments to the independent claims 27 and 43 overcome the current rejections. Support for amendments to claims 27 and 43 may be found at least on page 5, lines 8-18, and original claims 38, 41, 42 and 44.

In the previous response Applicants provisionally elected original Species A. According to the Office Action, Species A includes claims 27-28, 31-33, 35-37 and 40-45. As a result of the restriction requirement, claims 29-30, 34 and 38 were withdrawn. However, the Applicants hereby reserve the right to reinstate these claims at a later date.

Previously, the Applicants elected with traverse Species 1. According to the Office Action, "regarding claims 27 and 43 the Examiner asserts that [these] claims are generic claims represented by Figs. 6 and 9 and upon allowance of a generic claim, Applicants will be entitled to consideration of claims to additional species, which are written in dependent form or otherwise include limitations of an allowed generic claim as provided by 37 C.F.R. §1.141."

The Office Action also asserts that "dependent claims 29-30, 34 and 38 claim features not directed to the [species] illustrated in Fig. 6, and are not being considered." However, claims 29-30, 34 and 38 are dependent from claim 27, either directly or indirectly. According to 37 C.F.R. §1.141 and 37 C.F.R. §1.142, a requirement for restriction requires that the inventions be independent and distinct. Further, as shown in M.P.E.P. 806.04(f), the claims to restricted species must be mutually exclusive. The general test as to when claims are restricted, to different species, is the fact that one claim recites limitations that under the disclosure are found in a first species while a second claim recites limitations disclosed only for the second species and not the first. (M.P.E.P. 806.04(f)) This is frequently expressed by saying that claims to be restricted to different species must recite the mutually exclusive characteristics of such species. The burden is on the Examiner to establish a prima facie restriction requirement, not on the Applicants. In this case, since claims 29-30, 34 and 38 are all dependent either directly or

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indirectly from claim 27, and therefore, claim 27 does not recite elements that are mutually exclusively with claims 29-30, 34 and 38. Since claims 27, 29-30, 34 and 38 are not mutually exclusive, the restriction requirement is improper. As such, the Applicants respectfully request reinstatement of claims 29-30, 34 and 38.

Claim rejections under 35 U.S.C. §102.

Claims 27, 32-33 and 41-44 are rejected under 35 U.S.C. §102(e) based on Tanioka U.S. Patent No. 5,784,264A (Tanioka).

Tanioka

Tanioka is directed to a multichip module having wiring layers on front and back surfaces. (Col. 3, lines 54 through 57.) A carrier board 3 disposed at the back surface of the multichip module includes pads for external connection. (Col. 3, line 67 through Col. 4, line 11.) By changing the pad arrangement to a matrix arrangement, the spacing between the external connection terminals reduces solder flowing between pads, thus increasing yield. (Col. 5, lines 33 through 37.) A silicon layer 9 is interposed between the MCM board 1 and the carrier board 3 to enable cooling of the bare chip. (Col. 5, lines 9 through 10; Col. 5, lines 41 through 43.)

Claim 27 as amended recites:

A method comprising the steps of:

- directly attaching a first semiconductor die to a package substrate;
- forming electrical connections between the first semiconductor die and the package substrate;
- encapsulating the first semiconductor die in a structure having a planar top surface;
- securing the electrical connections;
- placing a second semiconductor die having a top surface in a die package;
- attaching the die package to the package substrate; and
- forming electrical connections between the die package and the package substrate;

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wherein the encapsulation top surface and the second semiconductor top surface are of equal distance from the package substrate.

According to the Office Action, claims 27-38, 32-33, 35, 37 and 42-45 are rejected under 35 U.S.C. § 102(e) based on U.S. Patent Application Publication No. 2002-0074669-A1 (Watanabe). In view of the agreement during the Examiner interview on August 6, 2004 that the amendments to claims 27 and 43 overcome the current rejections, claims 27 and 43 are allowable as written. As a result, the Watanabe reference is no longer citable as prior art, and therefore, the rejection based on Watanabe should be removed.

Dependent Claim 32

Applicants respectfully reassert the arguments made above regarding the above claims. In addition, Applicants also submit that claim 32 depends from claim 27 and as a dependent claim therefrom, claim 32 is allowable for at least the reasons claim 27 is allowable. Applicants further submit, argued in part at least immediately above, that claim 32 is also allowable in light of the presence of novel and nonobvious elements contained in claim 32 that are not otherwise present in claim 27.

Claim Rejection Under 35 U.S.C. §103

Claim 31 is rejected under 35 U.S.C. §103(a) based on Tanioka in view of U.S. Patent No. 5,872,051 B1 (Fallon). In view of the agreement with the Examiner that the claim amendments overcome the current rejections, claim 31 is allowable as written.

Claim 36

Claim 36 is rejected under 35 U.S.C. §103(a) based on Tanioka in view of U.S. Patent No. 6,376,907 B1 (Takano). In view of the agreement with the Examiner on August 6, 2004, this claim rejection is overcome. Applicants respectfully reassert the arguments made above regarding claim 27. In addition, Applicants also submit that claim 36 depends from claim 27, and as a dependent claim therefrom, claim 36 is allowable for at least the reasons that claim 27 is

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allowable. Applicants further submit, argued in part at least immediately above, that claim 36 is allowable in light of the presence of novel and nonobvious elements contained in claim 36 that are not otherwise present in claim 27.

Claims 39 and 40

Claims 39 and 40 are under 35 U.S.C. §103(a) based on Tanioka in view of U.S. Patent Application Publication No. 2002-0025608-A1 (Shinonaga). In view of the agreement with the Examiner on August 6, 2004, this claim rejection is overcome.

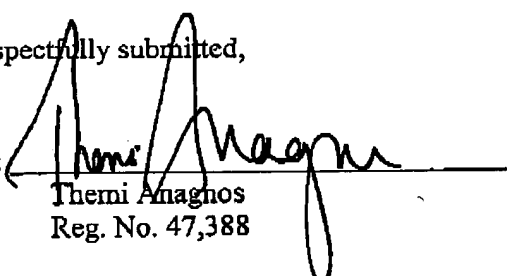
CONCLUSION

Applicants respectfully submit that the claims are in condition for allowance.

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Respectfully submitted,

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